A. de Brettwille
Jan 14 — 1911

The Kilbourne & Jacobs Mfg. Co.

Columbus, Ohio, U. S. A.

Ore and Mine Car Catalogue Number 60

PACIFIC COAST AGENTS

NORMAN B. LIVERMORE & CO.

OFFICES:

SAN FRANCISCO, 1215 METROPOLIS BANK BUILDING

SEATTLE, BAILEY BUILDING

SALT LAKE, DOOLEY BUILDING

578

PACIFIC COAST AGENTS
NORMAN B. LIVERMORE & CO.
OFFICES
DOOLY BLOCK, SALT LAKE
BAILEY BUILDING SEATTLE
Metropolis Bank Bldg
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THE KILBOURNE & JACOBS MFG. CO.

NEW YORK OFFICE:
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COLUMBUS, OHIO
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FOR
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CARS
SEE
CATALOGUE 61

Mine Car Catalogue No. 60

ILLUSTRATING AND DESCRIBING

MINING CARS OF ALL KINDS

FOR
CANE CARS
SEE
CATALOGUE 62

SEE CATALOGUE 63 FOR STEEL TRUCKS AND WAGONS

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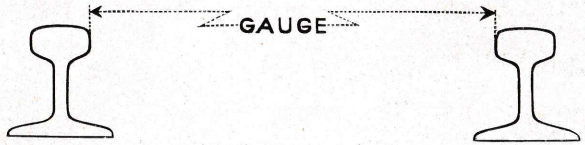
If your requirements are special and none of the types illustrated are suitable, we solicit your specifications, from which we shall gladly draw up a special design. Our facilities for special work are the best and we are thus enabled to quote very low prices and to make prompt delivery.



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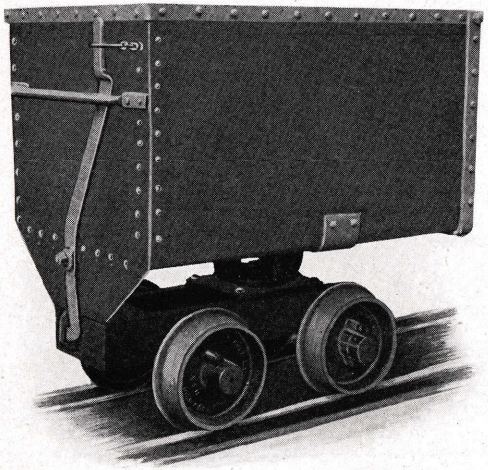
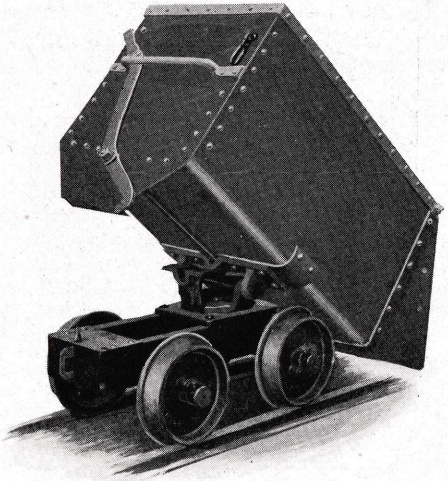
Standard "K. & J." Ore Cars





The bodies are made with sides and bottom of one piece of best quality steel, bent to shape without bottom side seams.

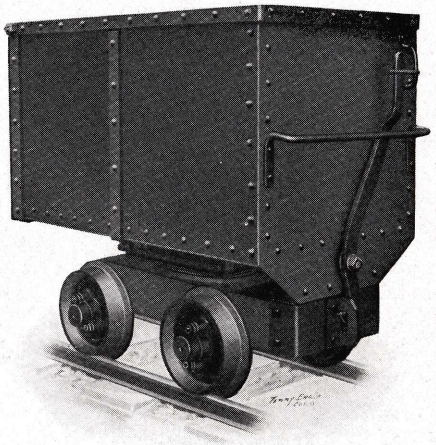
The truck frame is of steel channel.

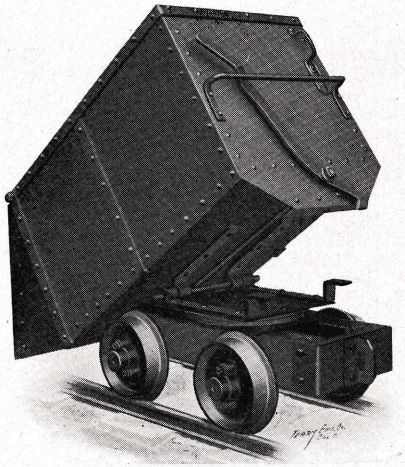
The axles are square and are of the best quality steel.

The wheels are of cast iron, chilled on face and having extra wide tread. They are fitted with malleable, self-oiling dust-proof caps. They can also be furnished with McCaskell, Anaconda or Esperanza wheels and axles.

This type car can be built to any special size and for any gauge of track, but we suggest that the sizes given on page 5 be followed when possible.

Leadville Type "K. & J." Ore Cars





This car is a very suitable type for general mining, shaft or cage use. It is very strong and durable in every respect.

The body is supported on a wrought steel turntable, permitting the load to be dumped at the end or at either side. A single lever serves to operate the hinged door and to lock the car body to the truck frame.

The truck frame can be made of oak or steel channel as specified.

The wheels are of chilled cast iron with extra wide tread. They are fitted with malleable, self-oiling, dust-proof caps. The axles are of the best quality square steel. McCaskell, Anaconda or Esperanza types of wheels and axles can be furnished when so ordered.

While we can build these cars to any special size and corresponding gauge of track, we suggest that the dimensions given on the opposite page be followed as closely as possible.

Standard "K. & J." Ore Cars

Car Number	Capacity in Cubic Feet	Overall Dimensions			Body of Car			Gauge of Steel			Size of Wheels	Size of Axles	Code Word
		Length	Width	Height	Length	Width	Depth	Sides	Bottom	Door			
550	12	43 in.	26 in.	36 in.	40 in.	24 in.	22 in.	No. 14	No. 14	No. 14	10 in.	1¼ in. sq.	Sliding
551	16	47 in.	28 in.	39 in.	44 in.	26 in.	24 in.	" 12	" 12	" 12	12 in.	1⅜ in. sq.	Slinging
552	20	47 in.	32 in.	41 in.	44 in.	30 in.	26 in.	" 11	" 11	" 11	12 in.	1½ in. sq.	Slipping
553	24	51 in.	34 in.	42 in.	48 in.	32 in.	27 in.	" 10	" 10	" 10	12 in.	1¾ in. sq.	Slothful

Leadville Type "K. & J." Ore Cars

Car Number	Capacity in Cubic Feet	Overall Dimensions			Body of Car			Gauge of Steel			Size of Wheels. Inches	Size of Axles. Inches	Code Word	
		Length Inches	Width Inches	Height Inches	Length Inches	Width Inches	Depth Inches	Sides	Bottom	Door			Oak Frame	Steel Frame
554	12	49	29	36	44	24	20	No. 12	No. 10	No. 10	10	1¼ in. sq.	Saloon	Salute
555	14	49	29	39	44	24	23	" 11	" 8	" 8	10	1¼ in. sq.	Sambo	Samson
556	16	53	29	42	48	24	24	" 10	" 8	" 8	10	1⅜ in. sq.	Sanative	Sand
557	20	53	35	42	48	30	24	" 8	3-16 in.	3-16 In.	12	1⅜ in. sq.	Sandal	Sanford
558	24	53	37	45	48	32	27	3-16 in.	¼ in.	¼ in.	12	1½ in. sq.	Sandwich	Sanguine

Weights of cars and other details not given in this table will be furnished upon request. Any of these cars can be provided with False Bottoms.

Unless otherwise specified, these cars will be built for 18 inch gauge of track.

Automatic "K. & J." Ore Cars---Numbers 559 to 563

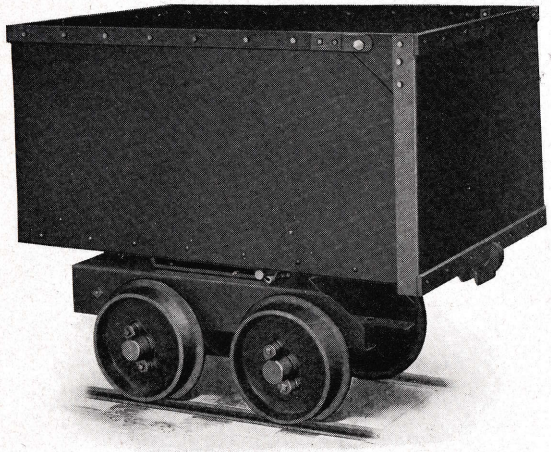
While these cars can be built to many capacities and we are always willing to quote on any modifications necessary, we suggest that the dimensions given in the following table be adopted when possible, to ensure prompt delivery.

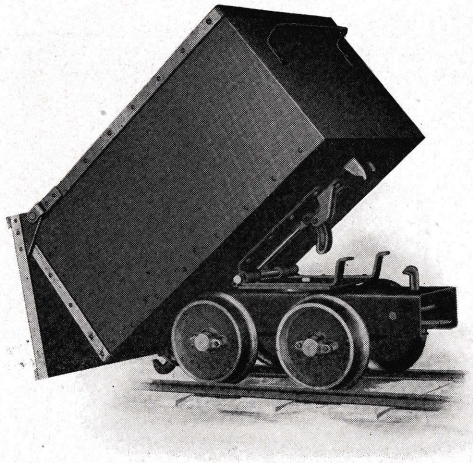
Car Number	Capacity in Cubic Feet	Overall Dimensions			Body of Car			Gauge of Steel			Size of Wheels in Inches	Size of Axles in Inches	Code Word
		Length in Inches	Width in Inches	Height in Inches	Length in Inches	Width in Inches	Depth in Inches	Sides	Bottom	Door			
559	12	49	30	37	44	24	20	No. 12	No. 10	No. 10	10	1¼ sq.	PLANING
560	14	49	30	40	44	24	23	" 11	" 8	" 8	10	1¼ "	PLANISH
561	16	53	30	42	48	24	24	" 10	" 8	" 8	10	1⅜ "	PLANK
562	20	53	36	42	48	30	24	" 8	3-16 in.	3-16 in.	12	1⅜ "	PLASTER
563	24	53	38	45	48	32	27	3-16 in.	1-4 in.	1-4 in.	12	1½ "	PLASTRON

Weights of cars and other details not given above will be gladly furnished on request.

These cars are built for 18 in. gauge when not otherwise specified.

Automatic "K. & J." Ore Cars





The door hook is hinged to a rod, the joint sliding in a yoke. The rod is controlled by a cam lever, pivoted to its opposite end, supported by a bracket and against the face of the turntable when the car is upright.

On tipping the car body the cam lever descends, allowing the door to be opened by the weight of the load. Righting the car body securely locks the door.

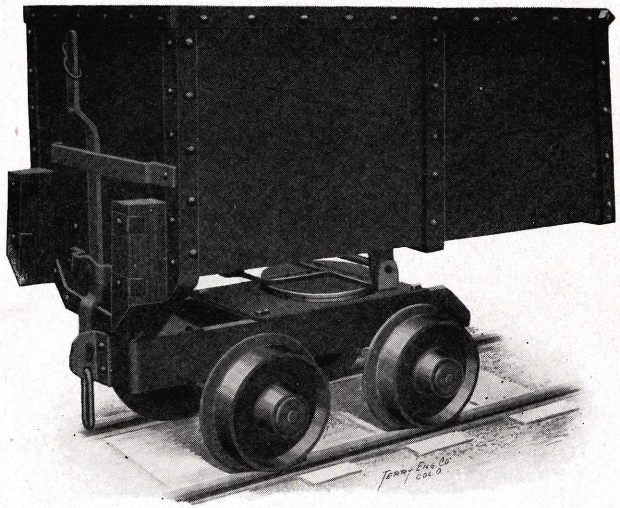
The car body is of high grade steel plate.

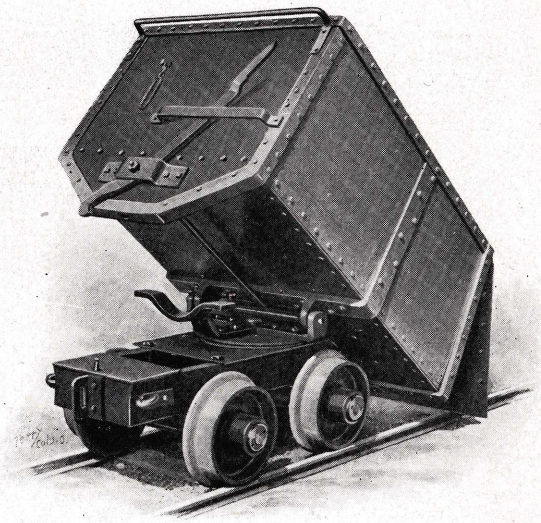
The door hinges are of heavy steel plate well re-enforced.

The platform is of heavy steel plate stamped in one piece.

The wheels are of chilled cast iron, are fitted with self-oiling, dust-proof malleable iron caps, and turn on square axles. Wheels and axles of McCaskell, Anaconda or any other type can be furnished.

Mine Cars---Numbers 564 to 568





This type of car is of heavy and substantial construction, intended for the most severe usage.

The body is thoroughly re-enforced with heavy bands and angles. The body is supported on a wrought steel turntable, permitting the load to be dumped at the end or at either side. This car is regularly built with McCaskell wheels and axles but if so ordered, can be furnished with either plain, the Anaconda or the Esperanza type.

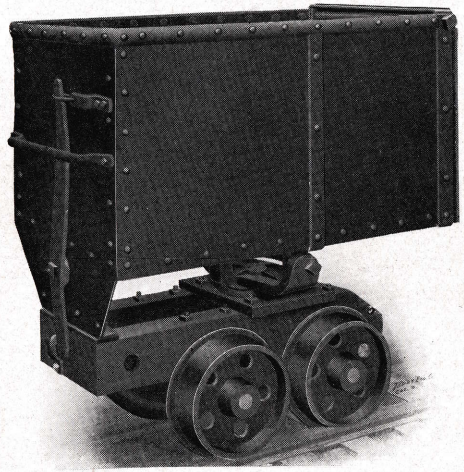
These cars can be furnished for any gauge up to 36 in.

A list of our standard sizes with dimensions is given on page 47. These dimensions are subject to such modifications as are warranted by special conditions.

Both our regular and special cars are shown above. The latter is equipped with wooden bumpers and chain couplers, as shown, and can also be furnished with foot brake.

Table of dimensions of regular sizes will be found on page 46.

Special Mine Car---Number 569



Special Mine Car No. 569 is constructed throughout of unusually heavy material for a car of its capacity and it is intended for the heaviest usage.

The body is supported on a cast iron turntable, permitting the load to be dumped at the end or at either side.

The truck frame is of oak.

Dimensions of car inside: Length 42 in., width 24 in., depth 24 in., capacity 14 cu. ft. Sides and ends of 3-16 in. steel plate. Bottom of 1-4 in. steel plate.

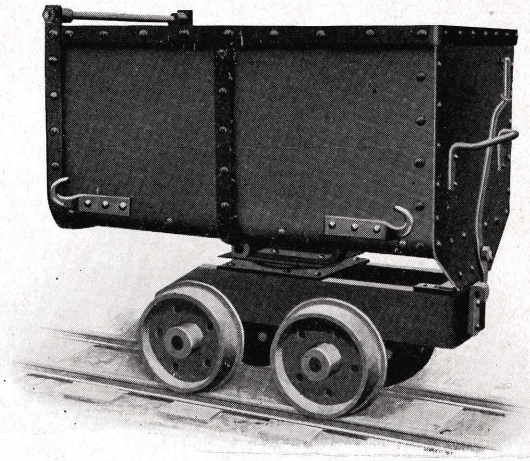
Overall dimensions: Length 47 in., width 28 in., height above rail 46 in.

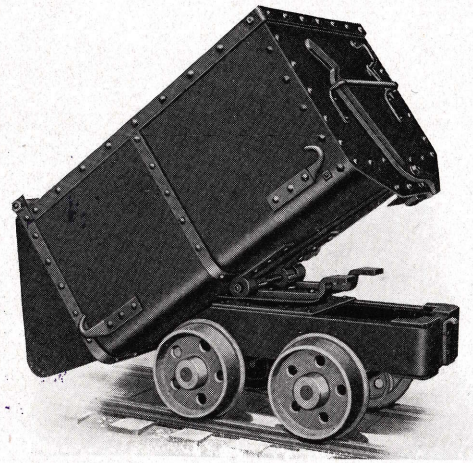
The car is regularly supplied with Anaconda wheels and axles. It can be furnished with either the McCaskell or the Esperanza type wheels and axles.

Unless otherwise ordered these cars will be built for 18 in. gauge of track.

Code Word: SMEAR

Special Mine Car---Number 570





This car has been adopted as the standard car by many of the largest mining companies, after thorough experiment.

Dimensions of car body inside : Length 48 in., width 30 in., depth 24 in. Capacity 20 cu. ft.

Sides and ends of 3-16 in. steel plate, well re-enforced by steel bars and angles.

Dimensions overall : Length 54 in., width 34 in., height above rail 43 in.

The body is supported on a wrought steel turntable, permitting the load to be dumped at the end or at either side. The truck frame is of one piece of 6 in. channel.

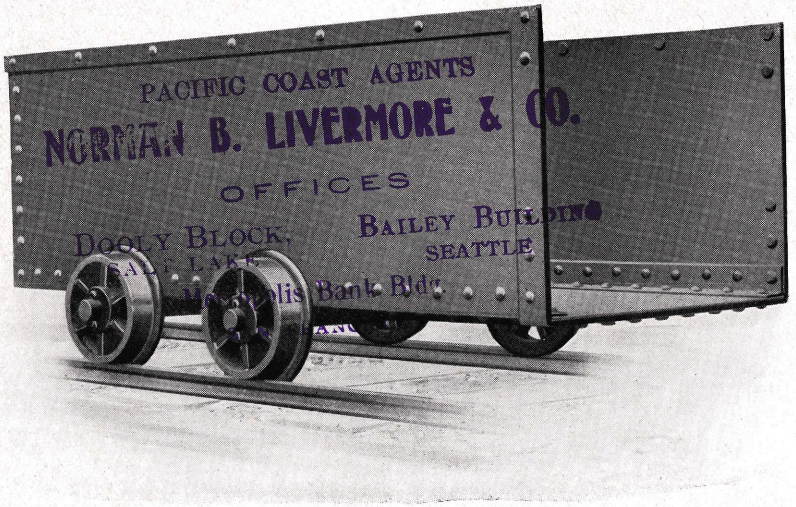
The car is regularly equipped with Anaconda wheels and axles, but can be furnished with the McCaskell or the Esperanza type.

Unless otherwise ordered these cars will be built for 18 in. gauge of track.

Code Word: SMILE

Heavy Mine Car---Number 571

Capacity 2½ Tons

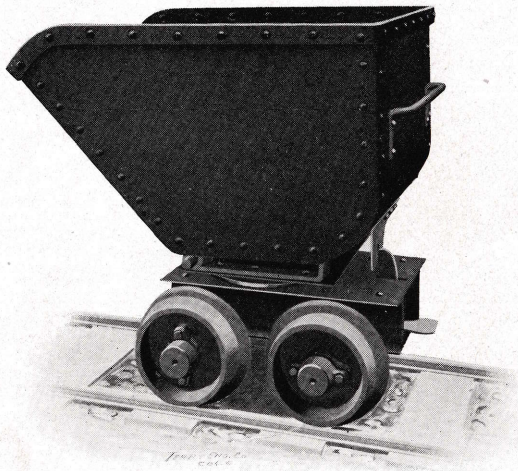


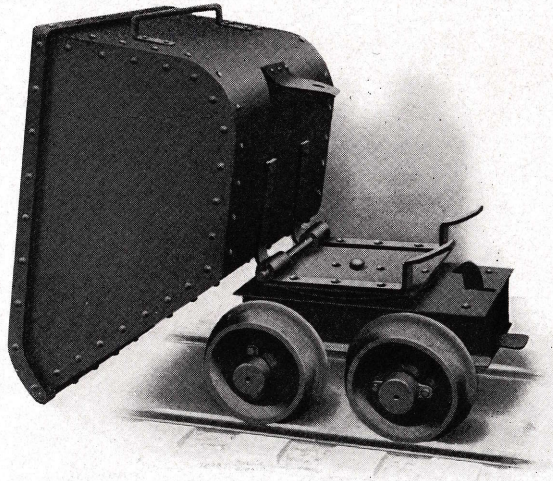
This type of heavy mine car is largely used in the copper regions.
The body is of ¼ in. plate with extra heavy connecting angles and re-enforcing bands.
The wheels are of chilled cast iron 12 in. in diameter, with brass bushings. They turn on square axles.

This car can be built to any capacity and for any gauge track.

Code Word: SMILING

Scoop Cars---Numbers 572 and 573





These cars are used in cages in shaft mining.

The bodies are of steel plate re-enforced with steel bands and angles, ensuring a very rigid and durable construction. The body is supported on a wrought steel turntable.

A treadle catch releases the body, when it may be freely turned on its turntable and easily dumped.

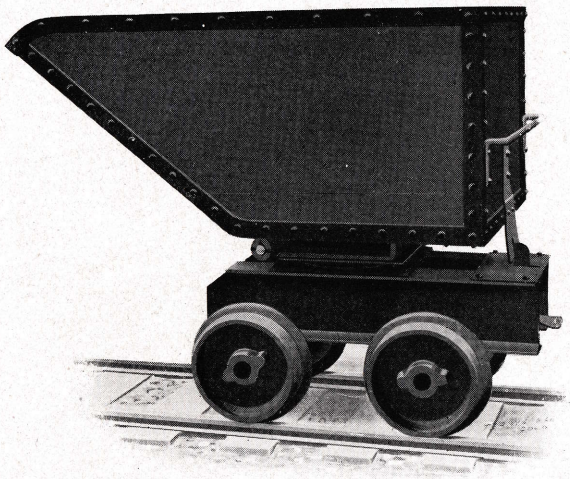
The truck frame is of steel channel. The wheels and axles are of our semi-self-oiling type.

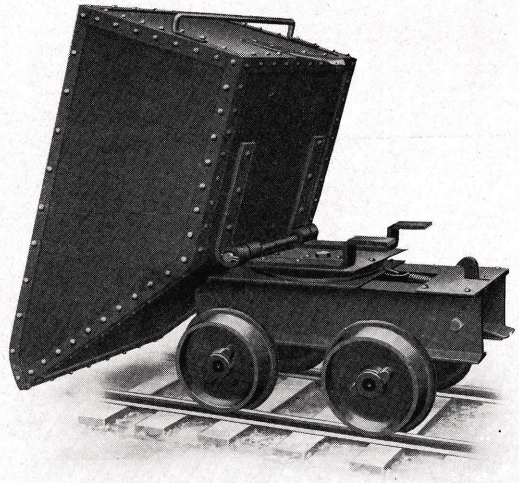
If these cars, as shown, are not suitable, we will gladly modify them according to your requirements.

Unless otherwise ordered these cars are built for 18 in. gauge of track.

Car Number	Capacity in Cubic Feet	Overall Dimensions			Body of Car			Gauge of Steel			Size of Wheels	Size of Axles	Code Word
		Length	Width	Height	Length	Width	Depth	Sides	Bottom	Door			
572	8	44 in.	28 in.	33 in.	39 in.	26 in.	17 in.	No. 12	No. 10	No. 10	10 in.	1½ in. sq.	SMOKE
573	12	47 in.	28 in.	39 in.	43 in.	26 in.	23 in.	" 12	" 10	" 10	10 in.	1¾ in. sq.	SMOKING

Scoop Cars---Numbers 574 and 575





The body of this type of car is supported on a wrought steel turntable and is securely locked to the truck by a treadle catch. When unlocked, it is easily turned on its turntable permitting the load to be dumped at the end or at either side.

The truck frame is constructed of steel I-Beam.

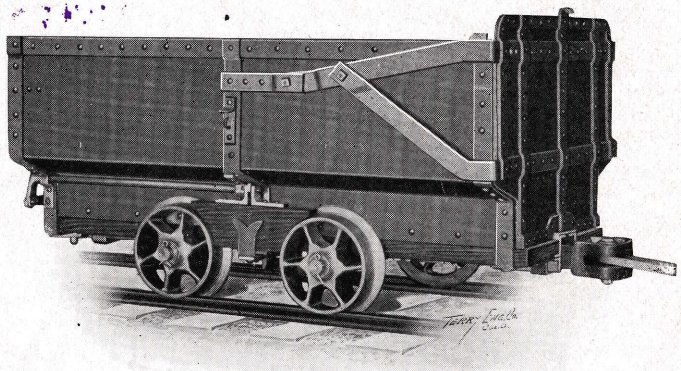
The wheels are of cast iron, chilled on face and have extra wide tread. They are pressed on 2 in. round steel axles turning in cast iron boxes, with babbitted bearings. Plain wheels and axles, or wheels and axles of any other type can also be furnished.

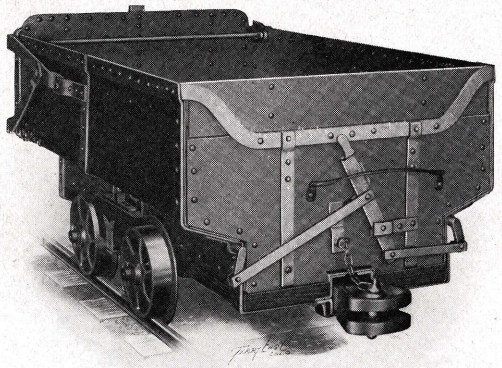
The dimensions, as regularly built, given below are variable to meet special conditions of use.

Unless otherwise ordered, these cars will be built for 18 in. gauge of track.

Car Number	Capacity in Cubic Feet	Overall Dimensions			Body of Car			Gauge of Steel			Size of Wheels	Size of Axles	Code Word
		Length	Width	Height	Length	Width	Depth	Sides	Bottom	Ends			
574	18	58 in.	32 in.	44 in.	52 in.	30 in.	24 in.	No. 10	No. 8	No. 10	12 in.	2 in. rd.	SMOLDER
575	21	58 in.	32 in.	48 in.	52 in.	30 in.	28 in.	No. 8	3-16 in.	No. 8	12 in.	2 in. rd.	SMUGGLE

Coal Car---Number 576





This car is of a type that is standard throughout the coal regions where steel cars are in use. We offer in connection with it every feature with which this class of cars can be equipped, together with superiority of construction.

It is of steel construction throughout with the exception of the floor which is of heavy hard wood.

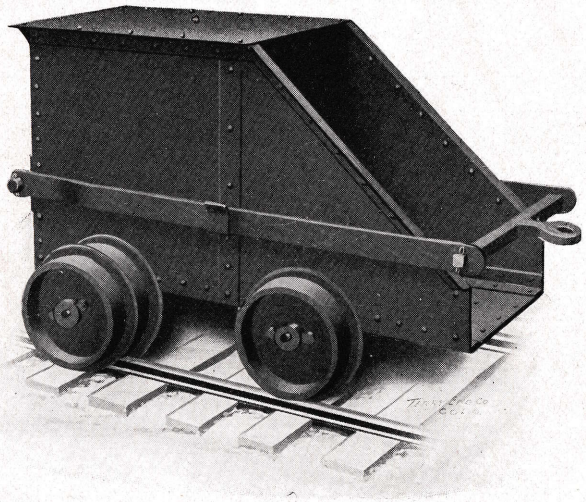
The car is equipped with spring draft gear, having a continuous steel housing and with self-oiling wheels. It is also supplied with brakes and with drop end for convenience in loading.

We are prepared to build cars of this type to any size according to specifications furnished us.

Code Word: SMUT

Automatic Self-Dumping Ore Skips

Number 577



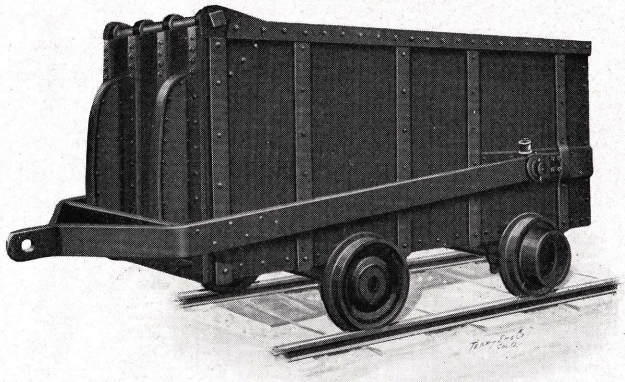
PACIFIC COAST AGENTS
NORMAN B. LIVERMORE & CO.
OFFICES
DOOLY BLOCK, SALT LAKE
BAILEY BUILDING, SEATTLE
Metropolis Bank Bldg.
SAN FRANCISCO

We build skips of this type to any capacity between 8 and 100 cubic feet, for gauges of track between 18 in. and 48 in., and to any angle of incline. They are constructed throughout of the best quality steel plate and angle iron to withstand the most severe usage.

While designed for carrying ore, they are often used for unwatering mines. When so ordered, they are provided with an automatic valve in the bottom end.

Car Number	Capacity in Cubic Feet	Dimensions of Body				Gauge of Steel		Diameter of Wheels	Size of Axles	Distance Between Flanges on Dumping Wheels	Gauge of Track	Code Word
		Length at Top	Length at Btm.	Width	Depth	Bottom & Ends	Sides & Top					
577	12	28½ in.	48 in.	24 in.	22 in.	No. 8	No. 8	12 in.	1¼ in. sq.	31 in.	24 in.	SNAGGED
578	80	42 in.	72 in.	44½ in.	48 in.	3-8 in.	5-16 in.	16 in.	3 in. sq.	56 in.	48 in.	SNAPPED

Mine Skip---Number 579



An extremely heavy skip, designed for the most severe use.

Dimensions of body inside: Length 10 ft. 0 in., width 4 ft. 0 in., depth 4 ft. 3 in. Approximate capacity level full, 165 cu. ft.

The body is made of very heavy steel plate, connected and re-enforced by heavy bars and angles.

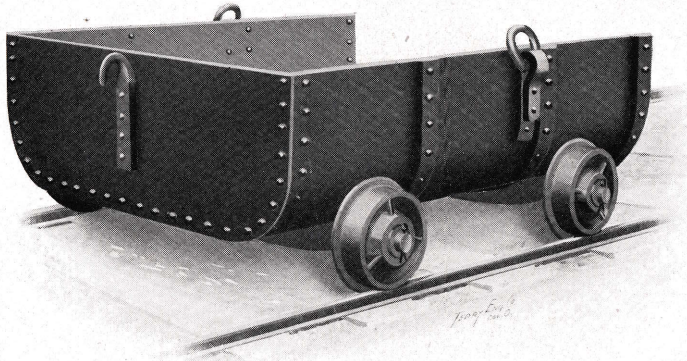
The wheels are of chilled cast iron. The track wheels are 20 in. in diameter. The dumping wheels are 14 in. in diameter. The wheels are pressed on 4 in. round axles, turning in inside bearing boxes with brass bearings.

Built regularly for standard gauge of track.

These dimensions are subject to modifications as desired.

Code Word: SNAPPISH

Cable-Way Skip---Number 580



This car or skip is built to run in tunnel headings, its design enabling it to be hoisted through the open pit and its contents dumped by cable-way.

Dimensions of body inside: Length 84 in., width 68 in., depth 24 in. Capacity 75 cu. ft. of material of any weight.

Thickness of steel throughout, $\frac{3}{8}$ in.

Strongly re-enforced by heavy bands and angles.

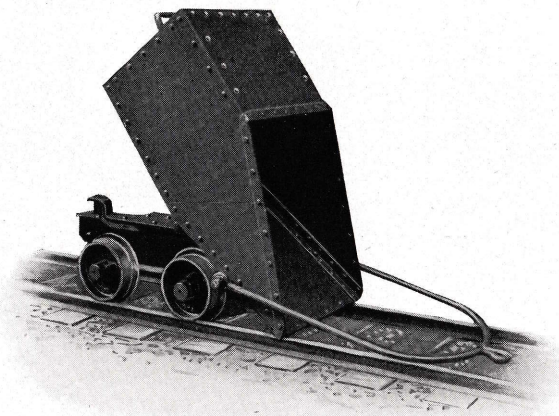
Cast iron wheels, chilled on face, having extra wide tread and fitted with brass bushings. Diameter of wheels 14 in.

Axles 4 in. square, of best quality of steel.

Gauge of track 6 ft. 0 in.

Code Word: SNATCH

Combined Car and Skip---Number 581



Designed for use in smaller mines, having inclined shafts and combines two necessary appliances in one.

Dimensions of body: Length 48 in., width 24 in., depth 20 in.

Gauge of steel plate throughout, No. 12.

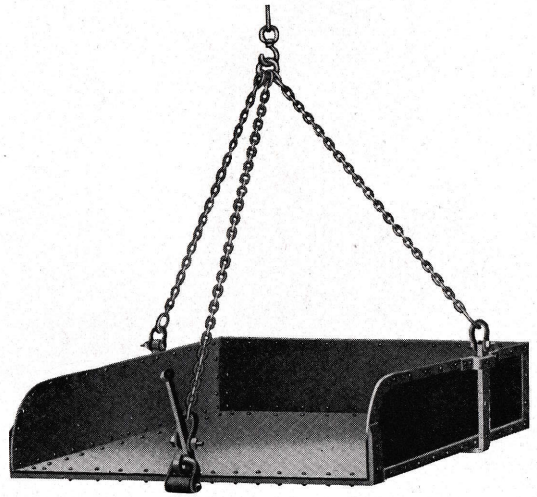
Wheels of cast iron, chilled on face and having extra wide tread. Diameter 10 in. Wheels are fitted with malleable, self-oiling, dust-proof caps. They turn on axles 1½ in. square.

Gauge of track 18 inches.

These dimensions are subject to modification as desired.

Code Word: SNEAKING

Steel Stone Skip---Number 582



This skip is used for handling stone, brick, concrete or similar material.

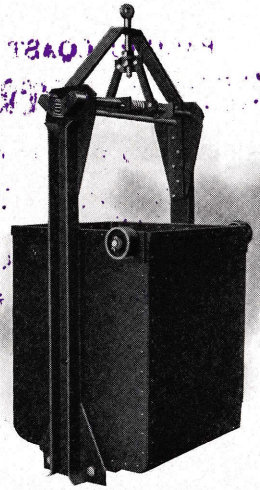
The box is of steel plate, well riveted and braced. The skip is supported by three chains, the front chain being provided with a dumping trigger. This trigger permits the load to be dumped without first lowering the unhooking chain and again hoisting.

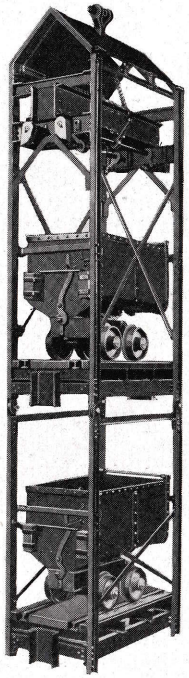
These skips are made to any size or capacity desired.

Code Word: SNORTING

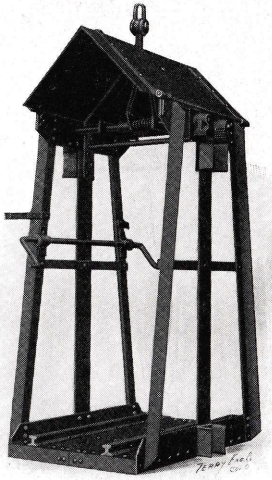
Double Deck Cage---Number 584

Vertical Shaft Skip
Number 583





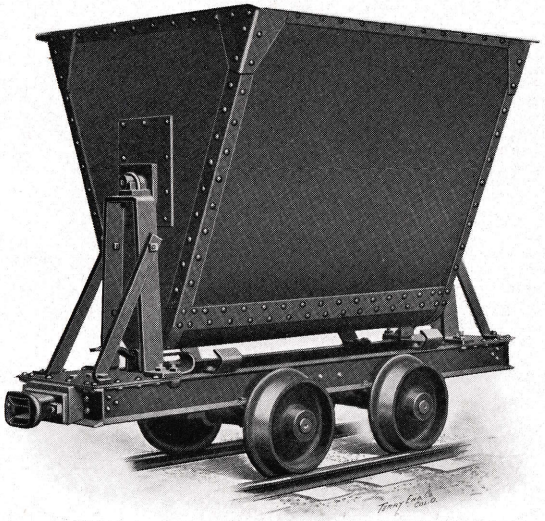
Single Deck Cage
Number 585



Our skips and cages of the types shown above are built throughout in an approved manner, from the best material and by the use of skilled labor. The many different sizes and capacities to which we have built these appliances preclude our adopting any size as standard. We are prepared to design and build them for any conditions of use and solicit specifications covering your requirements, that we may submit design and price.

Code Words:—Skip No. 583: SNUBBING Cage No. 584: SNUFFLING Cage No. 585: SOAKING

V-Shape Side Dump Cars---Numbers 586 to 589



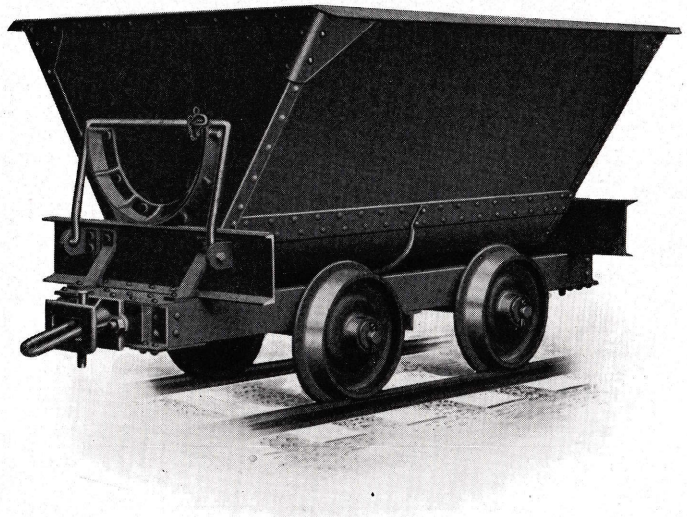
PACIFIC COAST AGENTS
NAGLE B. LIVERMORE & CO.
OFFICES
DOOLY BLOCK, SALT LAKE
BAILEY BUILDING SEATTLE
Metropolis Bank Bldg.
SAN FRANCISCO

These cars are designed especially for moving coal, cinder and other light material.
They are so balanced that when the foot trip-lever is depressed the cars will dump to either side as desired.
The body is of heavy steel plate, re-enforced by heavy angles.
The frame is of steel channel, with link and pin drawheads.
The wheels are of chilled cast iron, turning on steel axles. They are provided with malleable, dust-proof self-oiling caps. Roller bearings can be furnished if desired.

Our standard sizes for this type are listed on page 46. We are prepared, however, to build these cars to any special capacity. To insure a suitable angle of dump we do not recommend them for a greater capacity than 40 cu. ft., nor for gauge of track wider than 30 inches.

Table of Dimensions of Regular Sizes will be found on Page 46.

V-Shape Rocker Dump Cars---Numbers 590-592



Of the many designs of V-Shape Dump Cars for carrying ore, or for general purpose work, this type has often demonstrated its superiority under all conditions of use. It is very simple and cannot easily get out of order.

See opposite page for description.

V-Shape Rocker Dump Cars---Numbers 590 to 592

The body is of the best grade of steel plate connected by angles. The rockers are malleable, working on rocker supports of steel channel. These channels are of the requisite size to give a proper dumping angle, varying with the capacity and gauge of track.

This car is furnished with either round or square steel axles and either inside or outside bearings. The bearings are either plain, babbitt, brass or roller, as desired.

Chilled spoke, plate or cast steel wheels will be furnished.

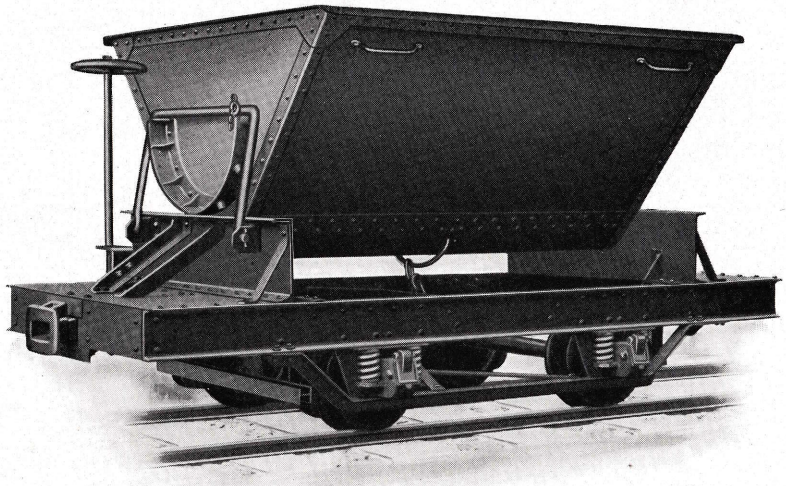
This car is provided with link and pin drawhead, securely attached to the end sills.

Built regularly for 18, 27 and 36 cu. ft. capacity and for 18 in. to 36 in. gauge.

We shall be glad to quote you upon receipt of information as to gauge of track, capacity wanted and material to be carried.

Car Number	Capacity Cubic Feet	Guage of Track	Overall Dimensions			Code Word
			Length	Width	Height	
590	18	18 in. to 24 in.	80 in.	44 in.	40 in.	SOBER
591	27	24 in. to 30 in.	86 in.	52 in.	43 in.	SODOM
592	36	24 in. to 36 in.	90 in.	58 in.	46 in.	SOFA

V-Shape Rocker Dump Car---Number 593



See opposite page for description

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V-Shape Rocker Dump Car---Number 593

The ease with which this car is dumped appeals to everyone. The rockers are so placed that the car dumps in either direction and automatically rights itself after dumping. This type car is designed for use in trains, for hauling ore and similar material considerable distances.

The body is of $\frac{1}{4}$ in. steel plate throughout, well connected and braced by heavy corner and top angles. Capacity 65 cu. ft.

The frame is of steel channel with drawheads of link and pin type. The rockers are of malleable iron. The rocker supports are of steel channel.

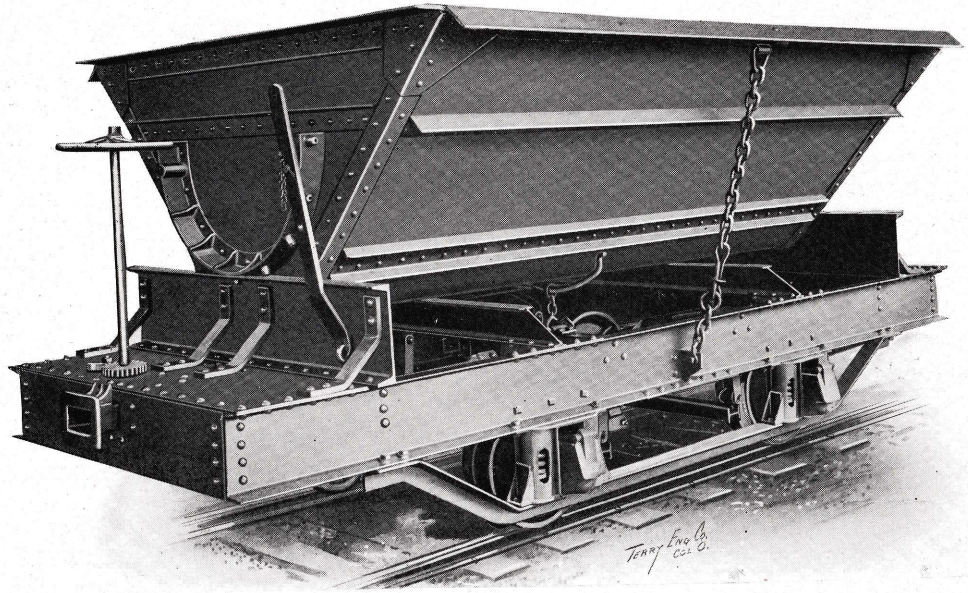
The wheels are of chilled cast iron, 18 in. in diameter, $3\frac{1}{2}$ in. face pressed on $2\frac{3}{4}$ in. round axles. The oil-boxes are of cast iron with brass bearings and work in spring pedestals.

The car is fitted with hand brakes operating on all four wheels. It is built regularly for 36 in. gauge of track.

Cars of this type can be built for any capacity from 60 to 135 cubic feet and for any gauge of track desired. Outline the conditions to be met and we will be glad to submit design and quote price.

Code Word: SOFTEN

V-Shape Rocker Dump Car---Number 594



This type of car is designed for heavy usage and is of very strong and durable construction.

The body is of 5-16 in. plate throughout, connected and re-enforced by heavy angles. Capacity 135 cu. ft.

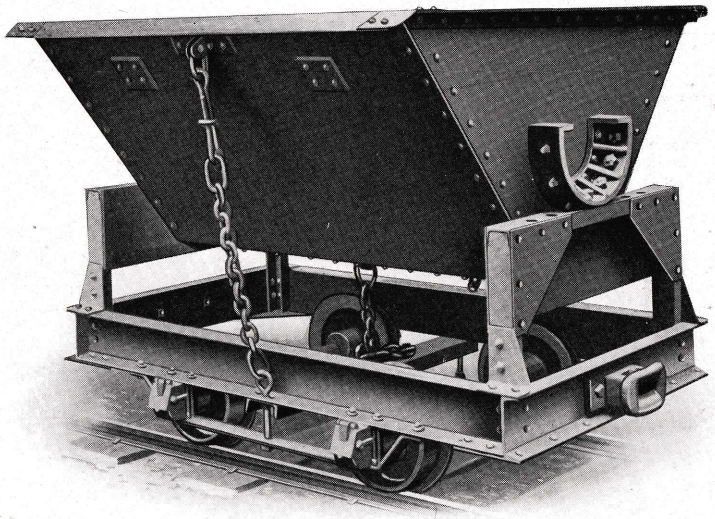
The frame is of steel channel with strong cross sills. It is provided with cast iron drawheads of link and pin type with spring draft gear. The rockers are of malleable iron working on supports of steel channel.

The wheels are of chilled cast iron, 20 in. in diameter, 3½ in. face, pressed on 3¼ in. round steel axles. The oil boxes are of cast iron with brass bearings and work in spring pedestals.

The car is equipped with hand brake applying to all four wheels. It is regularly built for 42 in. gauge of track.

Code Word: SOFTNESS

V-Shape Rocker Dump Car---Number 595



This car is designed for small capacities. It is strongly built and is intended for severe usage, but we do not recommend it for more than 54 cu. ft. capacity.

Our standard car of this type is built as follows:

The body is of ¼ in. steel plate throughout.

Dimensions of body inside: Length 5 ft. 0 in., width 4 ft 2 in., capacity 27 cu. ft.

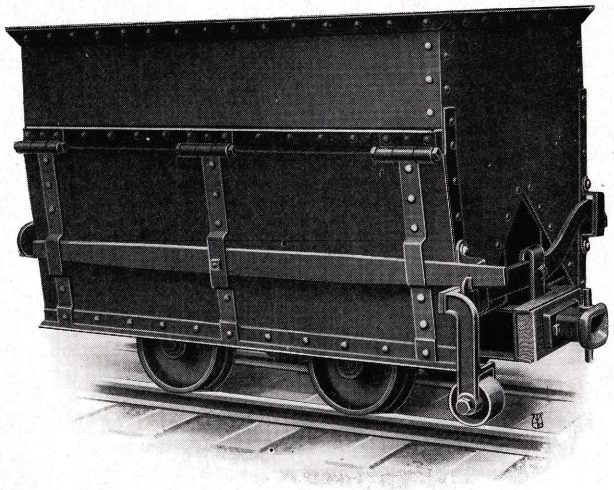
The frame is of steel channel braced by channel cross sills. Built-up rocker supports, with malleable iron rockers, are used. The couplers are of the link and pin type.

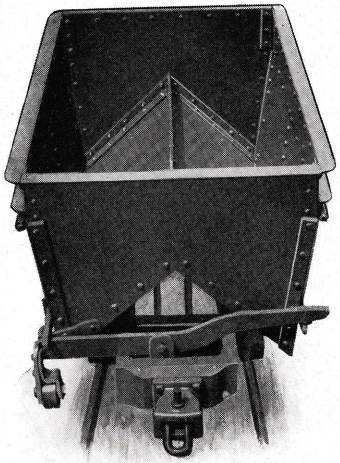
The wheels are of chilled cast iron, 12 in. in diameter, pressed on 2¼ in. round steel axles. The oil boxes are of cast iron with brass bearings.

The car is built regularly for 24 in. gauge.

Code Word: SOJOURN

Gable Bottom Car---Number 596





This car runs very easily and is especially suitable for carrying heavy, bulky material. It is built to withstand the severe strain of having ore, stone, coal or similar material dumped into it from above.

See opposite page for description.

Gable Bottom Car---Number 596

This car is regularly provided with our Automatic Door-Opening Device, as shown. By means of this device the doors can be opened automatically and the load discharged into bins, hoppers or off a trestle at any fixed point.

The car as shown is built as follows:

Dimensions of body inside: Length 60 in., width 40 in., capacity 30 cu. ft. Body made throughout of $\frac{1}{4}$ in. plate.

General dimensions of car: Width overall, 3 ft. 9 in., length over couplers, 7 ft. $2\frac{1}{4}$ in., height above rail, 44 in.

Truck frame of steel channel.

Wheels and axles of our self-oiling McCaskell Pattern as shown on page 46.

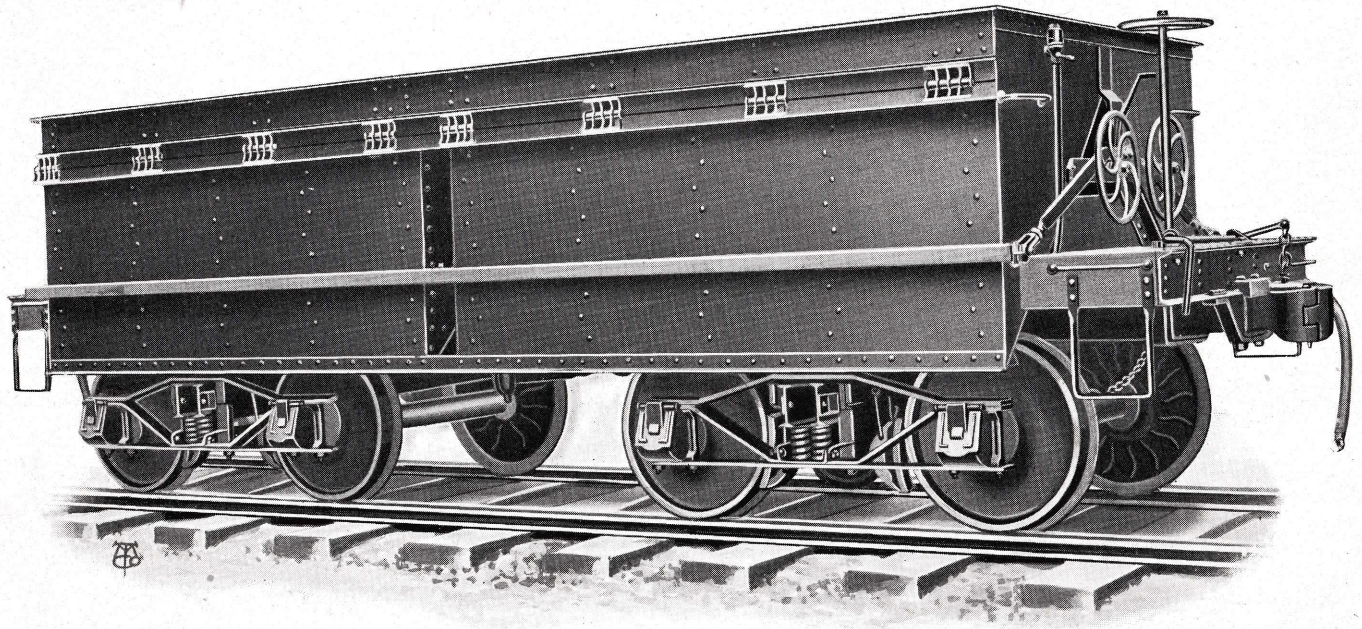
Gauge of track 24 inches.

This type car can be built for any capacity from 30 to 150 cu. ft. and for any gauge of track from 18 in. to 48 in., according to the material to be carried and the requirements of the conditions of use. We shall be glad to modify the above design to fill any requirements, changing either the capacity, the gauge of track or the style of wheels and axles. Cars of this type can be provided with our Anaconda wheels and axles, or wheels and axles having oil boxes and brass bearings.

Specifications and price on this type car built to any capacity, as above noted, will be gladly furnished.

Code Word: SOLACING

Double Truck Gable Bottom Car---Number 597



A large capacity gable bottom car embodying mechanical superiority in every detail.

See opposite page for description.

Double Truck Gable Bottom Car---Number 597

Dimensions of body inside: Length 19 ft. 8 in., width 7 ft. 8 in. Capacity 400 cu. ft. The bed is divided into two compartments of 200 cu. ft. each, by a transverse partition in the middle. The body is built of heavy steel plate throughout.

General dimensions of car: Length over couplers 26 ft. 0 in., width overall 8 ft. 5 in., height above rail 7 ft. 5 in., drawbar height, standard, 34½ in.

The underframe is built up of heavy structural shapes in a strong, substantial manner.

The car is provided with automatic couplers and our standard spring draft gear.

The trucks are of our all-steel, diamond frame, arch-bar type.

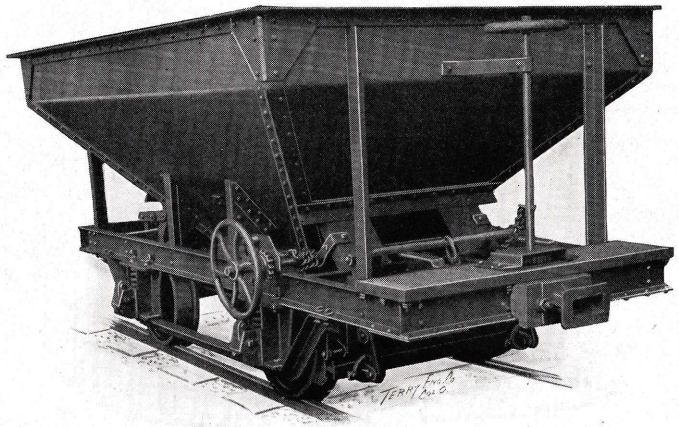
The wheels and axles are M. C. B. standard for a 40,000 pound car. The wheels are 33 in. in diameter, pressed on axles having 3¾ x 7 in. journals. The oil boxes are of cast iron with brass bearings.

Hand brakes and air brakes are furnished, applying on all four wheels of each truck.

The car is built for standard gauge of track.

Code Word: SOLAR

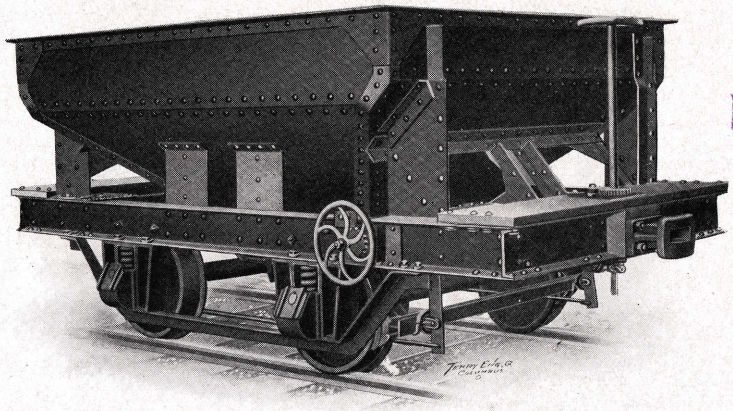
Hopper Bottom Car---Number 598



A well designed and strongly built car of a type furnished by us for the U. S. Reclamation Service.
The Hopper is built of 3-16 in. steel plate connected and re-enforced with heavy angles.
Dimensions of car inside: Length 9 ft. 0 in., width 5 ft. 10 in. Capacity 108 cu. ft.
Overall dimensions of car: Length over coupler 12 ft. 4 in., width 6 ft. 3 in., height above rail 5 ft. 1 in.
Drawbar height 19 in.
The frame is of steel channel, well braced by channel cross sills.
The drawheads are of the link and pin type, rigidly secured to the end sills.
The wheels are of the best quality chilled cast iron, 20 in. in diameter, pressed on 3¾ in. round steel axles. The oil boxes are of cast iron with brass bearings and work in spring pedestals.
The car is fitted with hand brake.
It is built regularly for 36 in. gauge of track.

Code Word: SOLDIER

Hopper Bottom Car---Number 599



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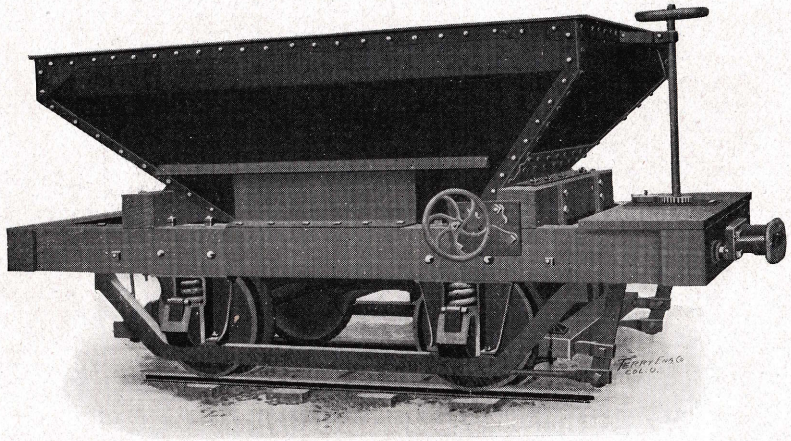
This car is built for heavy usage and is constructed throughout of the best material.
The hopper is built of ¼ in. steel plate, strongly re-enforced by heavy angles.
Dimensions of car inside: Length 9 ft. 0 in., width 7 ft. 2½ in. Capacity 150 cu. ft.
Overall dimensions of car: Length over couplers 13 ft. 8 in., width 7 ft. 9 in., height above rail 5 ft. 4 in.
Drawbar height 24 in.
The frame of the car is of steel channel, braced and strengthened by steel channel cross sills.
The wheels are of chilled cast iron, 24 in. in diameter, 3½ in. face, pressed on 4 in. round steel axles of the best quality.
The oil boxes are of cast-iron with brass bearings and work in spring pedestals.
The car is fitted with hand brakes.
It is regularly built for standard gauge of track.

Code Word: SOLEMN

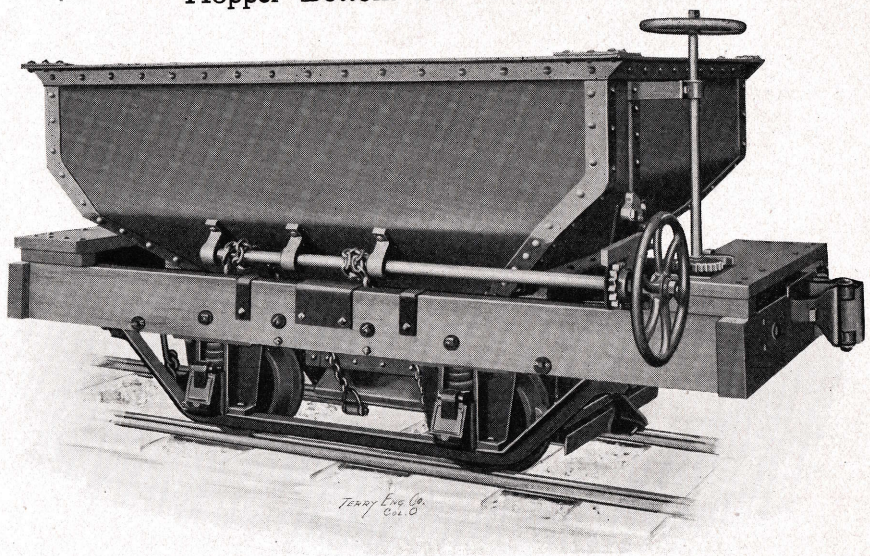
Hopper Bottom Ore Car---Number 600



This type of car is built for hauling ore and similar material.
The hopper is built of ¼ in. steel plate, strongly braced and re-enforced.
General dimensions of car inside: Length 7 ft. 6 in., width 6 ft. 0 in. Capacity 80 cu. ft.
Overall dimensions of car: Length over couplers 11 ft. 6 in., width 6 ft. 6 in., height above rail 5 ft. 1 in. Drawbar height 22 in.
The frame of the car is of heavy oak timbers.
The wheels are cast iron, chilled on the face and having an extra wide tread. They are 20 in. in diameter, pressed on 3¼ in. round steel axles of the best quality. The oil boxes are of cast iron and work in spring pedestals.
The car is equipped with hand brake operating on all four wheels.
It is regularly built for 36 in. gauge of track.

Code Word: SOLITARY

Hopper Bottom Car---Number 601



The Hopper is built of ¼ in. steel plate, connected by heavy angles.

Dimensions of Hopper inside: Length 6 ft. 6½ in., width 4 ft. 5 in. Capacity 60 cu. ft. level full.

Overall dimensions: Length over couplers 9 ft. 11 in., width 5 ft. 3½ in., height above rail 4 ft. 6 in. Drawbar height 20 in. The truck frame is of oak.

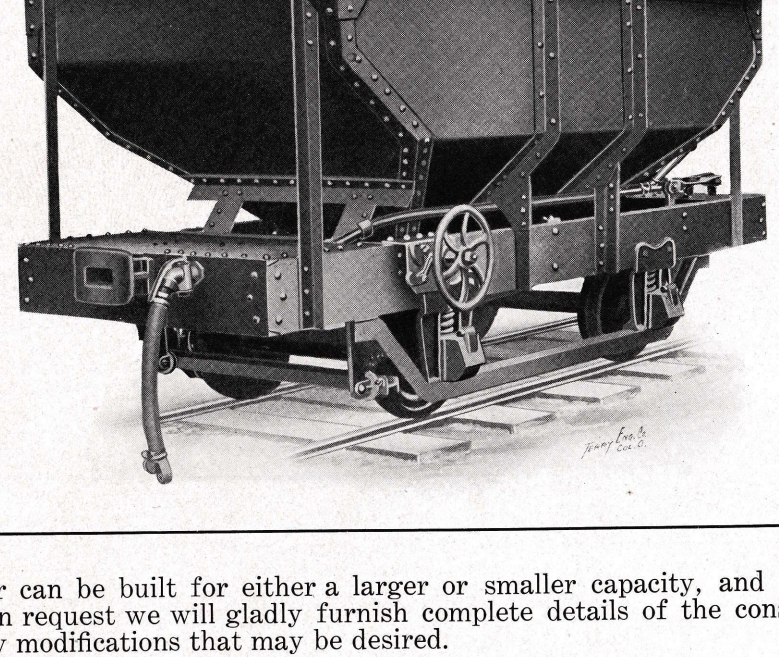
The wheels are of chilled cast iron 14 in. in diameter, pressed on 2½ in. round axles. The oil boxes are of cast iron with brass bearings and work in spring pedestals.

The car is fitted with hand brake applying to all four wheels. It is also equipped with small size automatic couplers and spring draft rigging.

The car is built regularly for 24 in. gauge track.

Code Word: SONGSTER

Hopper Bottom Car---Number 602



This type of car can be built for either a larger or smaller capacity, and for any corresponding gauge of track. Upon request we will gladly furnish complete details of the construction of the car as regularly built, or any modifications that may be desired.

See opposite page for description.

Hopper Bottom Car---Number 602

This car is of steel construction throughout.

The hopper is of $\frac{1}{4}$ in. steel plate, well connected and strengthened with heavy angles. The doors are of $\frac{3}{8}$ in. steel plate.

Dimensions of hopper inside: Length 11 ft. 0 in., width 5 ft. 6 in. Capacity 160 cu. ft. level full.

General dimensions of car: Length over couplers 14 ft. 5 in., width overall 6 ft. 2 in., height above top of rail 5 ft. 10 in. Drawbar height 26 in.

The truck frame is made up of structural shapes in a strong, substantial manner.

The car is provided with link and pin drawheads, with our standard spring draft rigging.

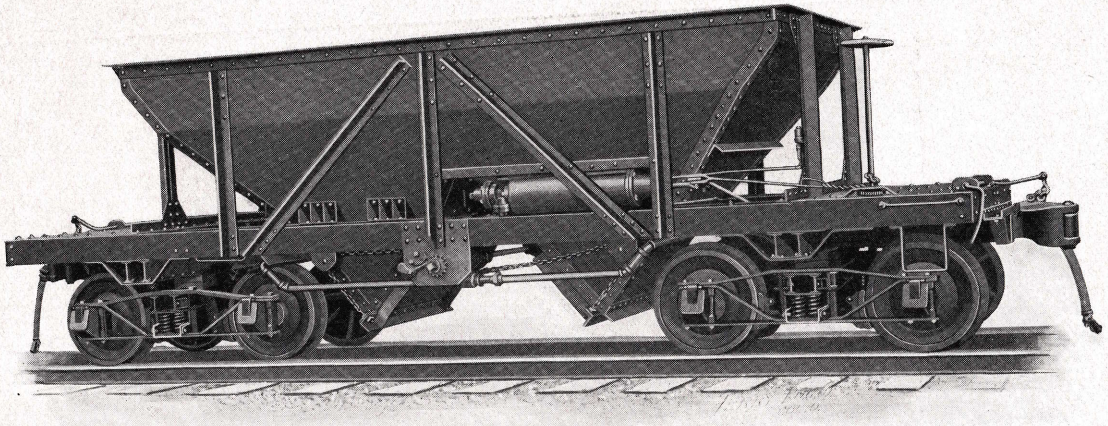
The wheels are 20 in. in diameter of the best quality chilled cast iron. They are pressed on 4 in. round steel axles. The oil boxes are of cast iron for oil and waste, with brass bearings. They work in spring pedestals.

The car is provided with Westinghouse air brakes and hand brakes operating on all four wheels.

It is regularly built for 36 in. gauge.

Code Word: SOLUTION

Hopper Bottom Car---Number 603



This car is designed for heavy usage and is of steel construction throughout.

Dimensions of hopper inside: Length 13 ft. 0 in., width 6 ft. 6 in., capacity 225 cu. ft. The hopper is built of ¼ in. steel plate, connected and re-enforced by heavy angles.

General dimensions of car: Length over couplers 21 ft. 6½ in., width overall 7 ft. 0 in., height above rail 6 ft. 3 in. Drawbar height 25 in.

The frame is of strong structural shapes, well connected.

The trucks are of our all-steel diamond frame arch-bar type.

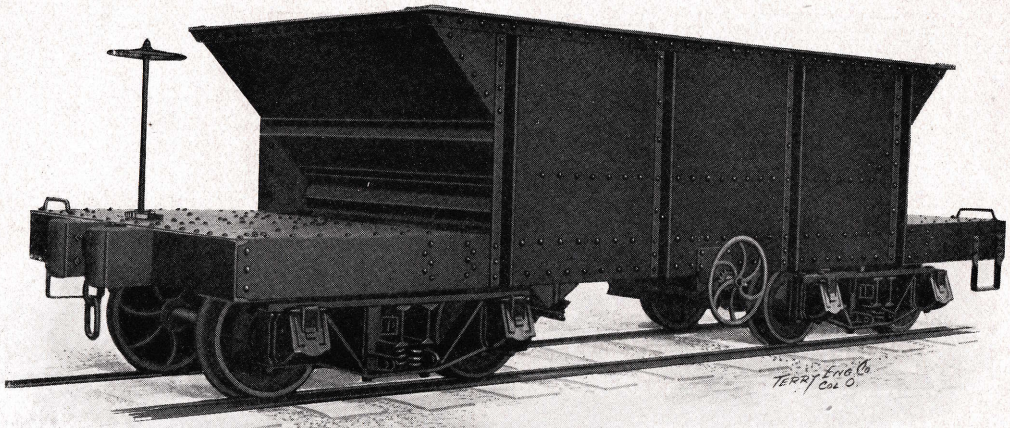
The wheels are of chilled cast iron, 24 in. in diameter, pressed on 4 in. round steel axles. The oil boxes are of cast iron with brass bearings.

The car is provided with automatic couplers. It is also furnished with hand and air brakes operating on all four wheels of each truck. It is built regularly for 36 in. gauge of track.

We are prepared to build cars of this type for any capacity from 150 to 350 cu. ft. and to any corresponding gauge of track.

Code Word: SONOROUS

Hopper Bottom Car---Number 604



This car is built throughout to withstand very heavy usage.

The hopper is of ¼ in. steel plate, connected and re-enforced by heavy angles.

Dimensions of hopper inside: Length 14 ft. 0 in., width 7 ft. 0 in., capacity 275 cu. ft.

General dimensions of car: Length over bumpers 22 ft. 1 in., width overall 7 ft. 11 in., height above rail 6 ft. 1 in., draw-bar height 28 in.

The frame is built up of heavy structural shapes and fitted with oak bumpers and chain couplers with spring draft gear.

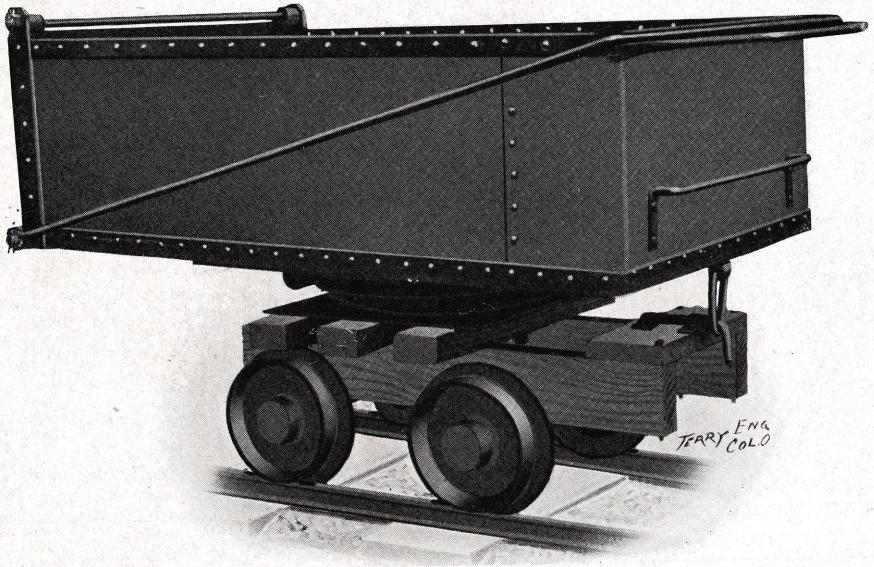
The trucks are of our all steel, diamond frame arch-bar type.

The wheels are of chilled cast iron 24 in. in diameter, pressed on round steel axles, with journals 3¾ in. by 7 in. The oil boxes are of cast iron with brass bearings.

The car is fitted with hand brakes, applying to all four wheels of one truck. It is built regularly for 36 in. gauge of track.

Code Word: SOUNDING

Sand Car---Number 605



This car is designed for hauling sand or similar material and can be made to any size and capacity.

The body is supported on our anti-friction, roller-bearing turntable. A treadle catch releases the body which is readily swung to either side, and dumped by means of the lower handle. The door is released by raising the upper handle. The eccentric door-locking device is very simple and locks the door automatically when the car is righted.

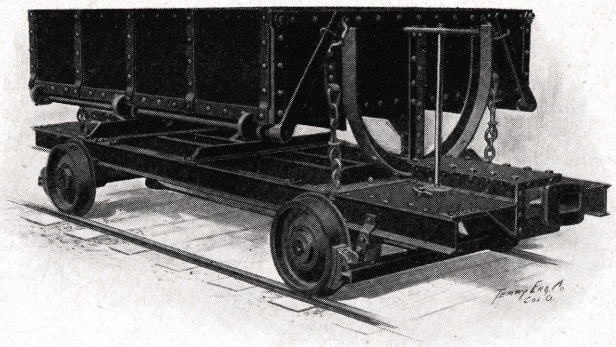
Dimensions of body inside as regularly built: Length 72 in., width 46 in., depth 22 in. Capacity 42 cu. ft. It is constructed throughout of No. 8 gauge steel plate.

The wheels are 14 in. in diameter, pressed on 2 in. round steel axles, turning in cast iron babbitted bearing boxes.

The gauge of track is 24 in.

Code Word: SPANISH

General Purpose Car---Number 606



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This car is used in hauling coal, pig iron, castings and other material of this character. It is also used as a slag or matte car.

Cars of this type have proved very satisfactory on account of their small height above rail and the consequent ease of loading.

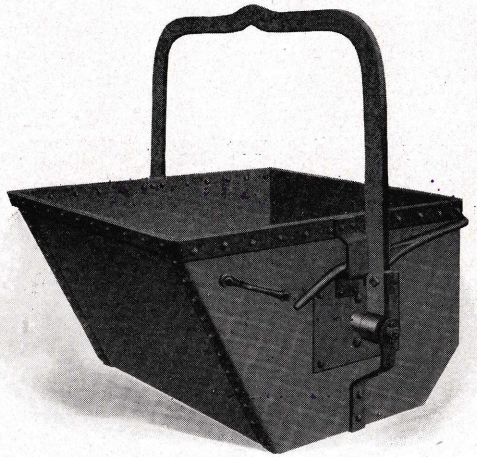
The body turns easily on the rockers, allowing the load to be readily dumped.

This car, as shown, is equipped with roller bearings, has a capacity of 85 cubic feet and is built for standard gauge of track. It can be modified as desired.

Code Word: SPARROW

"Surelock" Dump Buckets

Numbers 801 to 865



The front, bottom and back of this bucket are formed from one continuous sheet of steel. The sides are stamped with flanged edges through which they are securely riveted to the ends and bottom piece. It has a double steel bottom.

The bail is of heavy steel and works on strong strap braced trunnions.

The locking device consists of a single steel arm, extending from bail to bail, around the back of the bucket at the upper edge. When the bucket is in an upright position, shoulders on the arm at each side are in contact with latch bars which are firmly bolted to the bail, forming a secure latch. The extensions of the arm beyond the latch bars form the operating levers.

The bucket latches automatically on both sides when righted. Made in five sizes.

Number	Dimensions			Capacity	Gauge of Steel		Code Word
	Length	Width	Depth		Btm. & Ends	Sides	
801	46 in.	34 in.	28 in.	21 cu. ft.	No. 12	No. 12	PLACARD
802	50 in.	37 in.	30½ in.	27 cu. ft.	No. 12	No. 12	PLACID
803	54 in.	42 in.	33 in.	36 cu. ft.	No. 10	No. 10	PLAGUE
804	58 in.	42 in.	35 in.	41 cu. ft.	No. 8	No. 8	PLAINT
805	62 in.	48 in.	38 in.	54 cu. ft.	No. 8	No. 8	PLANET

Standard Ore Buckets

Top Swing---Numbers 821 to 824

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Center Swing---Numbers 825 to 828

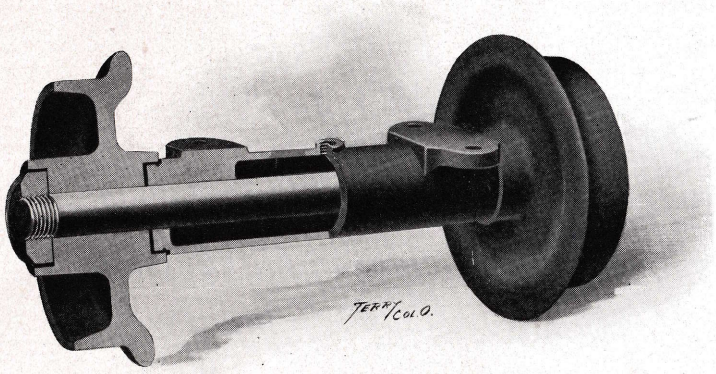
The buckets are made of the best grade of steel plate. They are pressed into shape and riveted, the rivets being countersunk so that the outside surface is smooth. We furnish both the self-acting and the top swing type. The former is swung at the center and provided with a safety link. The latter is top swung and provided with a dumping ring at the bottom. This ring does not prevent the bucket from standing upright as the bottom is dished.

Number		Height	Diameter			Gauge of	Capacity	Code Word	
Top Swing	Center Swing	Inches	Top Inches	Center In.	Bottom In.	Steel	Cu. Ft.	Top Swing	Center Swing
821	825	30	21	24	17	No. 11	6½	SPEAKING	SPINDLE
822	826	32	24	27	21	No. 8	9	SPENDING	SPINSTER
823	827	37	24	28	22	¼ in.	11	SPIDER	SPLASH
824	828	37	28	34	23	¼ in.	15	SPINAGE	SPONGING

We are also prepared to build buckets to any special size desired.

Wheels and Axles

The McCaskell

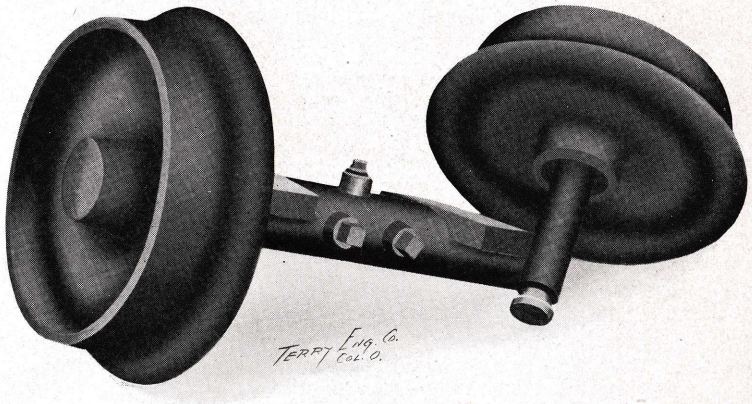


The wheel shown in section has a tapering bore and fits a correspondingly tapered axle, being secured by a nut. The other wheel is loose on the axle and is free to revolve. The axle, which is of cold rolled steel, revolves with the tight wheel. It is enclosed in a cast iron sleeve which is rigidly attached to the car frame. This sleeve has a cored oil reservoir which is filled through the opening at the middle of the sleeve. The opening is closed by a thumb screw.

These wheels and axles are regularly made for 18 in. gauge of track and with 12 in. chilled cast iron wheels, but may be built for other gauges and with 10 in. or 14 in. wheels.

Code Word: SPOON

The Esperanza



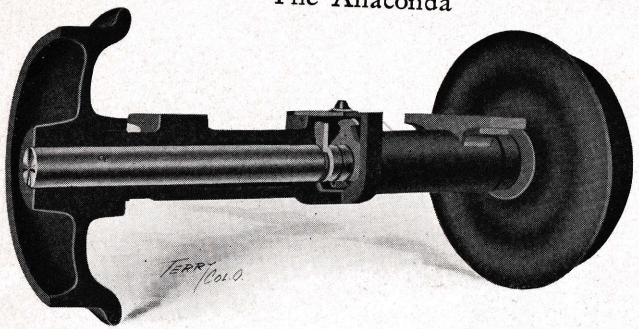
The axle is made in two parts, both wheels being pressed on. The cast iron sleeve supports the axle and the abutting ends are held in place by two tap screws on the side of the sleeve. Another tap screw closes the opening after oiling so that the bearing is completely dust proof.

The wheels are of the best quality chilled cast iron. The axles are of machined steel. The sleeves are of cast iron. Regularly made, the wheels are 12 in. in diameter and for 18 in. gauge of track. These dimensions are variable as desired.

Code Word: SPRAIN

Wheels and Axles

The Anaconda



The axle is made in halves, both wheels being pressed on. The divided axle makes allowance for variation in the number of revolutions of opposite wheels in passing curves or bad track, minimizing wear and making the cars more easily handled. The inside ends of the half axles are encircled by grooves within which curved brass castings fit, the castings being held rigidly in place by their position within the cast iron sleeve enclosing the axle. These castings hold the half-axle together. The sleeve is enlarged at the center to form an oil reservoir, over the opening of which a pressed steel cover is hinged.

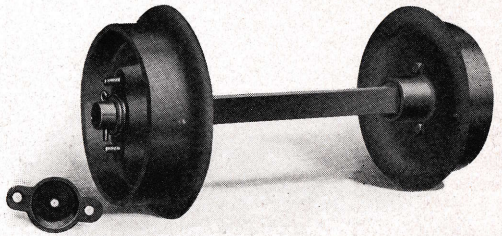
All parts are made to exact gauge and are interchangeable.

The axles are made in two sizes 1⅝ in. and 2 in.

Wheels, 12 in. in diameter, of chilled cast iron or of manganese steel. These wheels and axles are made for 18 in., 21 in., 24 in., 27 in., 30 in. and 36 in. gauge of track.

Code Word: SPRAWL

Semi-Self-Oiling Type



This type is quite generally used on Mine Cars and is very satisfactory. Wheels are of chilled cast iron, 10 in. or 12 in. in diameter, turning on square axles and secured on the axle by a washer and cotter. A malleable iron cap fits over the end of the axle and is fastened to the wheel by two bolts. This cap serves the double purpose of excluding dust and retaining the lubricant, which in the form of grease is placed in the cap.

Code Word: SPREAD

Table of Dimensions Applying to Mine Cars---Numbers 564 to 568

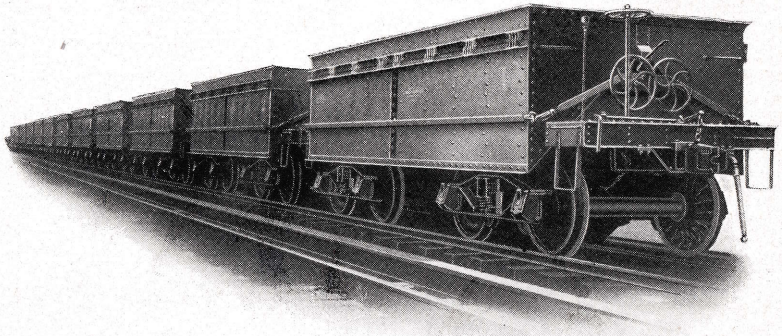
Shown on Page 8

Car Number	Capacity in Cubic Feet	Overall Dimensions			Body of Car			Gauge of Steel			Size of Axles	Code Word
		Length	Width	Height	Length	Width	Depth	Sides	Bottom	Door		
564	16	46 in.	30 in.	46 in.	40 in.	26 in.	26 in.	No. 12	No. 10	No. 12	12 in.	SLOUCH
565	18	50 in.	31 in.	46 in.	44 in.	27 in.	26 in.	No. 10	3-16 in.	No. 10	12 in.	SLOWNESS
566	20	54 in.	32 in.	46 in.	48 in.	28 in.	26 in.	3-16 in.	1-4 in.	3-16 in.	12 in.	SLUGGARD
567	27	54 in.	38 in.	48 in.	48 in.	34 in.	28 in.	1-4 in.	1-4 in.	1-4 in.	12 in.	SLUGGISH
568	30	60 in.	38 in.	48 in.	54 in.	34 in.	28 in.	1-4 in.	1-4 in.	1-4 in.	12 in.	SLUMBER

Table of Dimensions Applying to V-Shape Side Dump Cars---Numbers 586 to 589

Shown on Page 21

Car Number	Capacity in Cubic Feet	Body of Car			Height Above Rail	Gauge of Track	Diameter of Wheels	Code Word
		Length	Width	Depth				
586	10	36 in.	30 in.	30 in.	47 in.	24 in.	10 in.	SMACK
587	20	48 in.	40 in.	36 in.	55 in.	24 in.	12 in.	SMART
588	30	54 in.	48 in.	40 in.	60 in.	24 in.	12 in.	SMASH
589	40	60 in.	48 in.	48 in.	67 in.	24 in.	14 in.	SMATTER



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